SEP 1 5 1994

Inchcape Testing Services
Aquatec Laboratories

55 South Park Drive
Colchester, VT 05446
Tel. 802-655-1203
Fax. 802-655-1248

September 12, 1994

Mr. Richard Spiese
Agency of Natural Resources
Department of Environmental Conservation
Hazardous Materials Management Division
103 South Main Street - West Office
Waterbury, Vermont 05671-0404

Re: Summary Report for UST removals at the former Ethan Allen AFB in South Burlington (Site #94-1663);
Inchcape Project Number 94043

Dear Mr. Spiese:

The following is a summary report of investigations and analytical results pertaining to the removal of four UST's at the above referenced site on 17 and 18 August 1994. Tank removals and disposal were performed by Interface Services, Inc. of East Syracuse, NY with oversight by Mr. Al Laraway from the U.S. Army Corps of Engineers of Chicopee, MA. Soil screening and sampling was performed by Mr. Roland R. Luxenberg, P.E. of Inchcape Testing Services - Aquatec Laboratories (Inchcape) of Colchester, VT. The attached Location Map and Tank Pull Form Site Diagram indicate the overall and specific location of the UST's. These UST's were used to contain fuel oil (diesel), and were removed since they were no longer in use.

Excavated soils from three of the excavations (FT-1, FT-2, and FT-4) had PID headspace screening readings (following State protocols) well under 10 ppm, as indicated on the Site Diagram. Excavated soils surrounding FT-3, a 1000 gallon tank, had two headspace screening readings of 15 and 17 ppm; average readings from stockpiled soils with a petroleum odor were typically in the range of 5 to 10 ppm. Soils with a petroleum odor were observed to come out of excavation FT-3 along the eastern portion of the excavation, while soils along the western and southern portions of the excavation did not have an odor. Soils from the bottom of the excavation (eight to ten feet below grade) did not have an odor or elevated headspace readings, and no groundwater was encountered. A total of about 10 cubic yards of sandy soil (classified as Adams loamy sand per the SCS) were stockpiled on 18 August 1994 as potentially petroleum contaminated soil.

On that date, five locations in this stockpile were sampled for PID headspace screening. Readings of non-detect to 9 ppm were observed. A sample of soil associated with the highest PID reading was placed into two 40 ml vials and submitted to Inchcape for volatile organic compound analysis by EPA Method 8240. A composite of samples from the five locations was also placed into

250 ml glass jars and submitted for total petroleum hydrocarbon (TPH) analysis by a modified EPA Method 418.1. The attached Analytical Reports show the results of these analyses. TPH was found at 120 and 134 ug/kg in the field sample and field duplicate sample, while no VOC's typical of diesel fuel contamination where found in either sample.

After sampling, the stockpiled soils were relocated to a concrete roadway near the airport runways at the southern end of the airport as indicated on the Location Map. The soil was covered with plastic. This soil is scheduled for off-site disposal. All areas of excavation were covered with a new layer of asphalt or concrete.

The area surrounding the site is used for commercial activities, with some residential housing about one half mile to the south and southeast of the location of tank FT-3. No basements are present within at least 1000 feet of the site. With assistance from the Water Supply Division, it was determined that no active drinking water supplies (public or private, surface or groundwater) are located within one half mile of the site. The nearest potential receptor would appear to be either Muddy Brook (about 1700 feet to the east), or a small drainage swale to Potash Brook (about 1200 feet to the southwest). No data on groundwater flow direction is known to exist for this site, but the best estimate is that groundwater flows to the west or southwest from the site. Since petroleum contamination appeared limited in extent, since no contamination was observed at the bottom of the excavation, and since no groundwater was encountered in the excavation, the potential for receptors to be impacted appears highly unlikely.

It is not believed that any additional investigation is warranted for the above site. All potentially contaminated soils were removed from the excavation and disposed of off-site, all excavations were covered with an impermeable surface, no indication of vertical migration of contamination was observed, and no receptor is located particularly close to the site.

Please contact me if you have any questions regarding the information or conclusions contained in this report.

Sincerely,

Roland R. Luxenberg, P.E.

RRL/din

cc: Ms. Patty Lutz (Interface Services, Inc.)
Mr. Al Laraway (U.S. Army Corps of Engineers)

94043B8SEP94

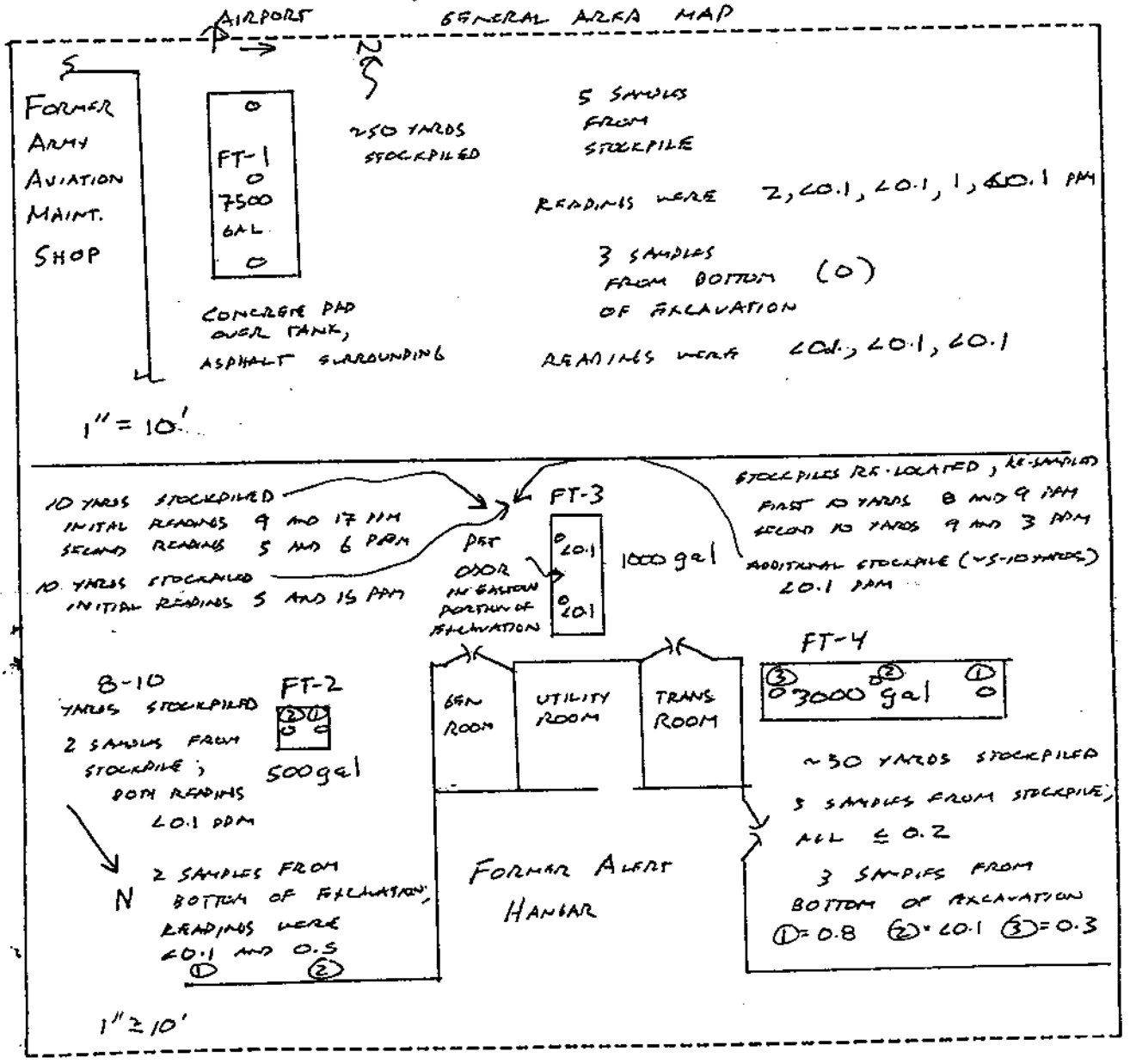
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
UNDERGROUND STORAGE TANK PROGRAM
TANK PULL FORM

TODAY'S DATE: 19 August 1994 INSPECTOR: Roland Luxenberg

DATE OF REMOVAL: 17 August 1994 & 18 BUSINESS NAME: Inchcape Testing Services Aquatec Laboratories

SITE DIAGRAM

Show location of all tanks and distance to permanent structures, sample points, areas of contamination and any pertinent site information. Indicate North arrow and major street names or route number.



Inchcape Testing Services
Aquatec Laboratories

Laboratory Locations
55 South Park Drive
Colchester, VT 05446

75 Green Mountain Drive
South Burlington, VT 05403

150 Herman Melville Boulevard
New Bedford, MA 02740

Analytical Report

Interface Services, Inc.
6695 Old Collamer Road
East Syracuse, NY 13057
315-437 [illegible] (3720)
Attention : Ms. Patty Lutz

Date : 09/12/94
ETR Number : 46074
Project No.: 94043
No. Samples: 2
Arrived : 08/19/94

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
231132	FT-3 Stockpile:08/18/94 @1405(Soil)		
IN670	Petroleum Hydrocarbons	134	f
IN623	Solids, Total	94.8	c
231133	FT-3 Stockpile Rep:08/18/94 @1405(Soil)		
IN670	Petroleum Hydrocarbons	120	f
IN623	Solids, Total	94.5	c

Comments/Notes

f = mg/Kg dry weight
c = %W/W as received
Petroleum Hydrocarbons prep blank <0.29 mg/Kg and LCS recovery = 109.5%.

< Last Page > Submitted By : R. Mason McNeer Aquatec Inc.

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Analytical Report

Date: 12 September 1994
ETR No.: 46074; Project No.: 94043
Blank Identification: Blank KYLB002DV for Aquatec Lab No's. 231132 and 231133.

Volatile Organic Compounds in ug/Kg
EPA Method 8240

benzene	5 U	chloromethane	10 U
carbon tetrachloride	5 U	bromomethane	10 U
chlorobenzene	5 U	bromoform	5 U
1,2-dichloroethane	5 U	bromodichloromethane	5 U
1,1,1-trichloroethane	5 U	dibromochloromethane	5 U
1,1-dichloroethane	5 U	tetrachloroethene	5 U
1,1,2-trichloroethane	5 U	toluene	5 U
1,1,2,2-tetrachloroethane	5 U	trichloroethene	5 U
chloroethane	10 U	vinyl chloride	10 U
chloroform	5 U	acetone	10 U
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
methylene chloride	5 U	total xylenes	5 U

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	90
toluene-d_8	90
p-bromofluorobenzene	105

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

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Analytical Report

Date: 12 September 1994
Aquatec Lab No.: 231132
ETR No.: 46074; Project No.: 94043
Sample Received On: 19 August 1994; Analyzed On: 01 September 1994
Sample Identification: Interface Services, Inc., soil sample labeled FT-3 Stockpile, 08/18/94 at 1405 hours.

Volatile Organic Compounds in ug/Kg Dry Weight
EPA Method 8240

benzene	28 U	chloromethane	55 U
carbon tetrachloride	28 U	bromomethane	55 U
chlorobenzene	28 U	bromoform	28 U
1,2-dichloroethane	28 U	bromodichloromethane	28 U
1,1,1-trichloroethane	28 U	dibromochloromethane	28 U
1,1-dichloroethane	28 U	tetrachloroethene	28 U
1,1,2-trichloroethane	28 U	toluene	28 U
1,1,2,2-tetrachloroethane	28 U	trichloroethene	28 U
chloroethane	55 U	vinyl chloride	55 U
chloroform	28 U	acetone	55 U
1,1-dichloroethene	28 U	2-butanone	55 U
1,2-dichloroethenes	28 U	carbon disulfide	13J
1,2-dichloropropane	28 U	2-hexanone	55 U
trans-1,3-dichloropropene	28 U	4-methyl-2-pentanone	55 U
cis-1,3-dichloropropene	28 U	styrene	28 U
ethylbenzene	28 U	vinyl acetate	55 U
methylene chloride	28 U	total xylenes	28 U

% Solids = 95

Due to late eluting hydrocarbons, the sample was diluted 5.3 fold for analysis.

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	83
toluene-d_8	98
p-bromofluorobenzene	92

Key to the letters used to qualify the results of the analysis:

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B - The compound was present in the method blank. The result reported here is not blank corrected.

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Analytical Report

Date: 12 September 1994
Aquatec Lab No.: 231133
ETR No.: 46074; Project No.: 94043
Sample Received On: 19 August 1994; Analyzed On: 01 September 1994
Sample Identification: Interface Services, Inc., soil sample labeled FT-3 Stockpile Rep, 08/18/94 at 1405 hours.

Volatile Organic Compounds in ug/Kg Dry Weight
EPA Method 8240

benzene	28 U	chloromethane	55 U
carbon tetrachloride	28 U	bromomethane	55 U
chlorobenzene	28 U	bromoform	28 U
1,2-dichloroethane	28 U	bromodichloromethane	28 U
1,1,1-trichloroethane	28 U	dibromochloromethane	28 U
1,1-dichloroethane	28 U	tetrachloroethene	28 U
1,1,2-trichloroethane	28 U	toluene	28 U
1,1,2,2-tetrachloroethane	28 U	trichloroethene	28 U
chloroethane	55 U	vinyl chloride	55 U
chloroform	28 U	acetone	55 U
1,1-dichloroethene	28 U	2-butanone	55 U
1,2-dichloroethenes	28 U	carbon disulfide	28 U
1,2-dichloropropane	28 U	2-hexanone	55 U
trans-1,3-dichloropropene	28 U	4-methyl-2-pentanone	55 U
cis-1,3-dichloropropene	28 U	styrene	28 U
ethylbenzene	28 U	vinyl acetate	55 U
methylene chloride	28 U	total xylenes	28 U

% Solids = 95

Due to late eluting hydrocarbons, the sample was diluted 5.3 fold for analysis.

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	88
toluene-d_8	111
p-bromofluorobenzene	87

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

8240
Laboratory Fortified Blank

Lab Name:	Inchcape Testing Services - Aquatec Laboratories.		
Client:	Interface Services, Inc.		
Project:	94043	ETR:	46074
Client No.:	LFB-KYL-D	Filename:	KLY001DQV

Compound Name	Amount	Spike Added	Percent Recovery
chloromethane	8.54	10	85
vinyl chloride	9.11	10	91
bromomethane	9.45	10	95
chloroethane	9.71	10	97
1,1-dichloroethene	10.86	10	109
acetone	19.15	10	192
carbon disulfide	11.11	10	111
methylene chloride	10.38	10	104
1,1-dichloroethane	11.30	10	113
2-butanone	13.06	10	131
chloroform	10.75	10	108
1,1,1-trichloroethane	11.20	10	112
carbon tetrachloride	11.16	10	112
benzene	10.15	10	102
1,2-dichloroethane	10.34	10	103
trichloroethene	10.38	10	104
1,2-dichloropropane	9.54	10	95
bromodichloromethane	8.83	10	88
cis-1,3-dichloropropene	9.67	10	97
4-methyl-2-pentanone	11.07	10	111
toluene	10.96	10	110
trans-1,3-dichloropropene	9.46	10	95
1,1,2-trichloroethane	9.80	10	98
tetrachloroethene	11.60	10	116
2-hexanone	12.57	10	126
dibromochloromethane	9.05	10	91
chlorobenzene	10.57	10	106
ethylbenzene	10.98	10	110
styrene	10.91	10	109
bromoform	9.66	10	97
1,1,2,2-tetrachloroethane	9.82	10	98
xylene (total)	31.93	30	106
1,2-dichloroethene (total)	20.27	20	101

Chain-of-Custody Record

Inchcape Testing Services
Aquatec Laboratories

55 South Park Drive
Colchester, VT 05446

TEL: (802) 655-1203
FAX: (802) 655-1248

COMPANY INFORMATION	COMPANY'S PROJECT INFORMATION	SHIPPING INFORMATION
Name:	Project Name: AIRPORT UST	Carrier:
Address:	Project Number: 94043	Airbill Number:
	Sampler Name(s): ROLAND LUKENBERG	Date Shipped:
Telephone:		Hand Delivered: ☒ yes ☐ no
Facsimile:		
Contact Name:		

INCHCAPE LABORATORY INFORMATION — Quote #: 59300 — Client Code: INTSER

SAMPLE IDENTIFICATION (NOTE 1)	COLLECTION DATE	COLLECTION TIME	GRAB	COMPOSITE	MATRIX	ANALYSIS/REMARKS (NOTE 2,3)	VOLUME/CONTAINER TYPE/PRESERVATIVE (NOTE 4): 40ml/glass	250 ml/Amb Glass	NUMBER OF CONTAINERS
FT-3 STOCKPILE	8/18/94	1405	✓		SOIL	8240	2		
FT-3 STOCKPILE REP	〃	〃	〃		〃		2		
FT-3 STOCKPILE	8/18/94	1405		✓	SOIL	TPH		1	
FT-3 STOCKPILE REP	〃	〃		〃	〃			1	

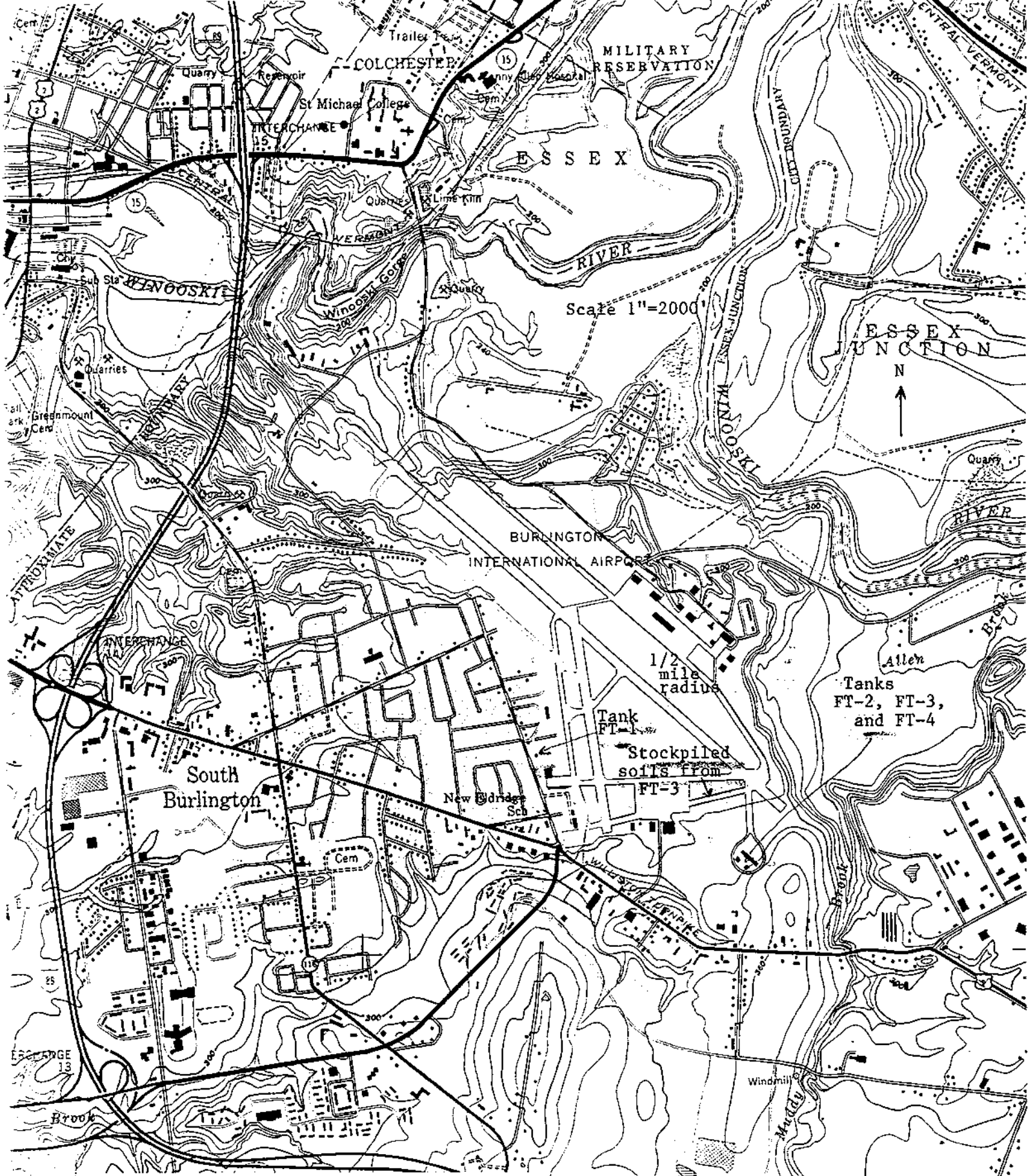
8/12/94

Relinquished by: (signature)	DATE	TIME	Received by: (signature)
[signature]	8/18/94	0945	
Relinquished by: (signature)	DATE	TIME	Received by: (signature)
Relinquished by: (signature)	DATE	TIME	Received for Laboratory by: (signature)
	8/19/94	1100	Michael T. Hewlett

NOTES TO SAMPLER(S): (1) Limit Sample Identification to 21 characters, if possible; (2) Indicate designated Lab Q.C. sample and type (e.g.: MS/MSD/REP) and provide sufficient sample; (3) Field duplicates are separate sample; (4) e.g.: 40 ml/glass/H_2SO_4

Notes to Lab: REPORT ON DRY WEIGHT BASIS

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files



Location Map for tank removal at the former Ethan Allen AFB in South Burlington, Vermont (using USGS 7.5' Quadrangle, Burlington, VT. 1987).